What is claimed is:

1. A manufacturing method of an optical fiber having one or more holes extending along the axis, comprising:

a first process for forming holes in a preform;

a second process for heating the preform and drying the inside of the holes; and

a third process for drawing the preform into an optical fiber.

2. A manufacturing method of an optical fiber according to claim 1, wherein:

at least a part of the holes are through-holes; and

the second process is performed while a dry gas is flowed through the through-holes.

3. A manufacturing method of an optical fiber according to claim 1, wherein:

at least a part of the holes have a closed end; and

the second process is performed while the holes having a closed end are filled with a dry gas.

4. A manufacturing method of an optical fiber according to claim 3, wherein:

the process for filling a dry gas into the holes having a closed end and the process for discharging the dry gas from the holes having a closed end are repeated alternately in the second process.

5. A manufacturing method of an optical fiber according to claim 1,

wherein:

at least a part of the holes have a closed end; and

the second process is performed while the inside of the one or more holes having a closed end is subjected to reduced pressure for evacuationing.

6. A manufacturing method of an optical fiber according to claim 1, wherein:

the preform is heated at a temperature equal to or higher than 800 °C in the second process.

7. A manufacturing method of an optical fiber according to claim 2 or 3, wherein:

the dew point of the dry gas is -50 °C or lower.

8. A manufacturing method of an optical fiber according to claim 7, wherein:

the dry gas includes an inert gas equal to or more than 85 % by molar fraction.

9. A manufacturing method of an optical fiber according to claim 8, wherein:

the inert gas is selected from a group consisting of N_2, He, and Ar.

10. A manufacturing method of an optical fiber according to claim 7, wherein:

the dry gas includes an active gas which has dehydration effect.

11. A manufacturing method of an optical fiber according to claim 10, wherein:

the active gas having dehydration effect includes at least one of HF, F_2, Cl_2, and CO.

12. A manufacturing method of an optical fiber according to claim 1, wherein:

the inner wall surfaces of the holes of the preform are smoothed prior to the second process.

13. A manufacturing method of an optical fiber according to claim 1, wherein:

the inner wall surfaces of the holes of the preform are subjected to dry etching prior to the second process.

14. A manufacturing method of an optical fiber according to claim 1, wherein:

the pressure in the holes is adjusted during to the third process.

15. A manufacturing method of an optical fiber according to claim 1, wherein:

the preform having the holes is formed from a columnar glass rod, using a perforation tool in the first process.

16. A manufacturing method of an optical fiber according to claim 1, wherein:

a plurality of capillary tubes are assembled to form a bundle and the bundle is inserted into a jacketing pipe to form the preform having the holes in the first process.

17. An optical fiber having a core and a cladding, the cladding

surrounding the core, and either or both of the core and the cladding being provided with one or more holes extending along the axis;

the optical fiber allowing light to propagate in an axial direction by confining the light in the core the total reflection or Bragg reflection at a transmission loss of 200 dB/km or less at the 1380 nm wavelength.

18. An optical fiber according to claim 17, wherein:

the density of water inside the holes is 1 mg / liter or less.

19. An optical fiber according to claim 17, wherein:

the transmission loss at the wavelength of 1380 nm is 30 dB/km or less.

20. An optical fiber having a core and a cladding, the cladding surrounding the core, and either or both of the core and the cladding being provided with one or more holes extending along the axis;

the optical fiber allowing light to propagate in an axial direction by confining the light in the core by total reflection or Bragg reflection at a transmission loss of 10 dB/km or less at the 1550 nm wavelength.

21. An optical fiber according to claim 20, wherein:

the transmission loss at the wavelength of 1550 nm is 3 dB/km or less.

22. An optical fiber according to claim 21, wherein:

the transmission loss at the wavelength of 1550 nm is 1 dB/km or less.

23 An optical transmission system including at least one optical fiber having a core and a cladding, the cladding surrounding the core, and either or both of the core and the cladding being provided with one or more holes extending along the axis;

the optical fiber allowing light to propagate in an axial direction by confining the light in the core by the total reflection or Bragg reflection at a transmission loss of 10 dB/km or less at the 1550 nm wavelength.